FUTV4443A-10
4 in 1 Mux-Scrambling QAM

User's Manual

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NMS Version: 3.3.8

SW: 0.12

HW: 2.1

Directory

Chapter 1 Product Outline ..... ……..2
1.1 Outline 2
1.2 Features 2
1.3 Specifications 2
1.4 Principle chart 3
Chapter 2 Appearance and Illustration 4
2.1 Front Panel: 4
2.2 Rear Panel: 4
Chapter 3 Installation Guide 5
3.1 Acquisition check 5
3.2 Installation Preparation 5
Chapter 4 Operation 9
4.1 LCD Menu Tree 9
4.2 Main Interface 11
Chapter 5 SNMS Setting 19
5.1 Installation 19
5.2 Software Operation 19
5.3 4443A 4 in 1 Mux-Scrambling QAM Operation 24
5.4 Out Setting 32
5.5 Real-time Monitor 33
5.6 EIT Time 33
5.7 Parameters 34
Chapter 6 Troubleshooting 35
Chapter 7 Packing List 37

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Chapter 1 Product Outline

1.1 Outline

FUTV4443A is a cost effective integrated 4 in 1 QAM modulator supporting multiplexing and scrambling. This device supports maximum 6 DVB-S2 tuner+4 ASI input, after 4 multiplexer and 4 scrambler processes, then gives 4 carriers output (4 adjacent frequency by 1 RF port) and gigabit IP output. The device is characterized with high integrated level, high performance and low cost. This is very adapting to newly generation CATV broadcasting system.

1.2 Features

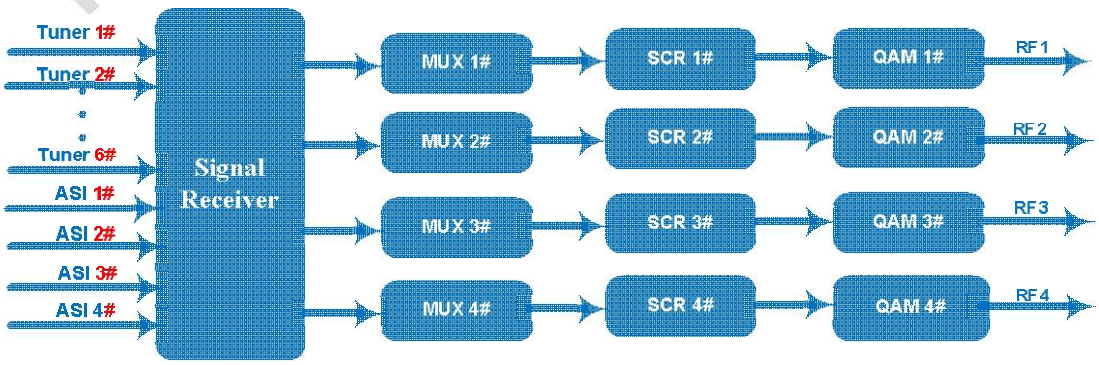
- Support 6 DVB-S2 tuner+4 ASI input optional
- Fully support DVB-C (EN300 429) and ITU-T J.83A/B/C
- Fully support DVB general scrambling system description ETR289, simulcrypt standard ETSI 101 197 and ETSI 103 197
- Support 4 channels multiplexing, 4 channels scrambling and 4 channels QAM modulating
- Support gigabit IP output
- Simultaneously support 4 simulcrypt CA
- Support accurate PCR adjusting
- Support PSI/SI editing and inserting
- Excellent RF output performance index, MER≥40db
- Support LCD display and keyboard
- Support SNMP management

1.3 Specifications

Input		6 DVB-S2 tuner+4 ASI input
Multiplexer	Input	6 DVB-S2 tuner+4 ASI input
	Output Channel	4 RF output

	Max PIDs	256 per channel
	Functions	PID remapping(auto/manually optional) PCR accurate adjusting PSI／SI table automatically generating
Scrambling	Max simu-encrypt CA	4
	Scramble Standard	ETSI 101 197,ETSI 103 197
	Connection	Local/remote connection
QAM Modulation	QAM Channel	4
	Modulation Standard	EN300 429/ITU-T J.83A/B/C
	Symbol Rate	2.5Msps~4.66Msps, 5.0Msps~8.0Msps，1ksps stepping
	Constellation	16、32、64、128、256QAM
	FEC	RS (204, 188)
RF Output	Interface	F typed output port for 4 carriers, 75Ω impedance
	RF Range	48~1000 MHz，1kHz stepping
	Output Level	-25dBm~6dBm，0.5dB stepping(-16dBm~-0dBm)
	MER	≥ 40db
	ACLR	(Adjacent Channel Leakage Ratio) − 60 dBc
IP Out	Gigabit	
System	Support LCD display, keyboard operation, and NMS/SNMP operation. English and Chinese operation interface conversion	
	English and Chinese interface conversion	
	Ethernet software upgrade	
General	Demission (W*L*H)	482mm×455mm×44.5mm
	Weight	6.7kg
	Temperature	0~45℃(operation)，-20~80℃(storage)
	Power Supply	AC 100V±10%，50/60Hz or AC 220V±10%，50/60Hz
	Consumption	25W

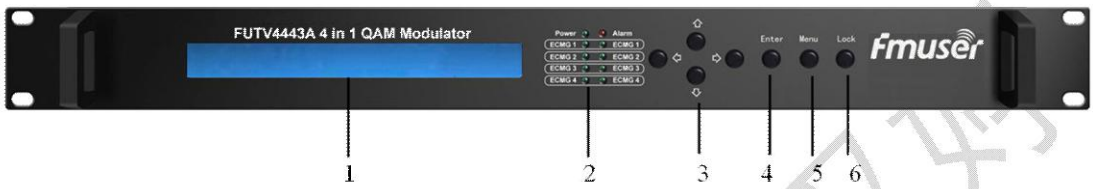
1.4 Principle chart



Chapter 2 Appearance and Illustration

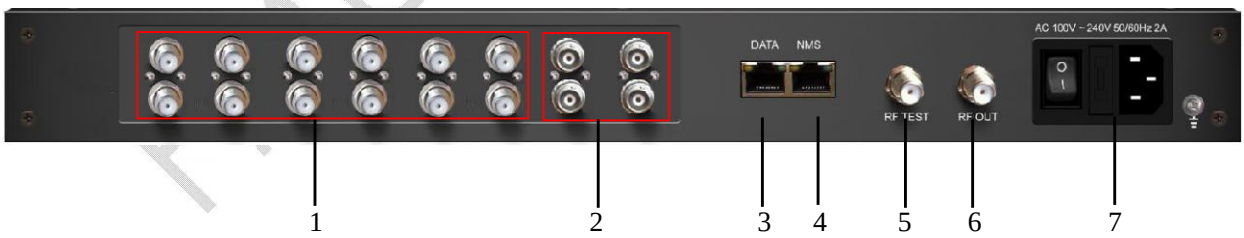
Indicator area: All the indicators will light on when the 4 in 1 Mux-Scrambling QAM works at current state.

2.1 Front Panel:



1	LCD Display	
2	Indicator Area	POWER：Power Indicator Alarm：Alarming Indicator ECMG1/2/3/4 Indicator EMMG1/2/3/4 Indicator
3	Up/Down/Left/Right Key	
4	Enter：Confirmation Key	
5	Menu Key	
6	Locking Key	

2.2 Rear Panel:



1	Tuner 1-6 IN	Channel 1-6 Tuner Input
2	ASI 1-4 IN	Channel 1-4 ASI Input
3	Data	IP Port
4	NMS	NMS Interface
5	RF TEST	RF Test Interface
6	RF OUT	RF Out Interface
7	Power	Power Socket

Chapter 3 Installation Guide

3.1 Acquisition check

When users open the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- FUTV4443A 4 IN 1 Mux-Scrambling QAM 1pc
- User's Manual 1pc
- Tuner wire 5pcs
- ASI wire 4pcs
- Grounding wire 1pc

If any item is missing, please inform local dealer.

3.2 Installation Preparation

When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.

The main content of this chapter including:

1 Checking the possible device missing or damage during the transportation

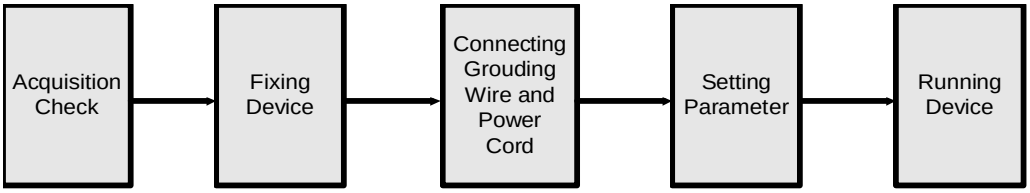
2 Preparing relevant environment for installation

3 Installing 4 in 1 Mux-Scrambling QAM

4 Connecting signal wires

5 Connecting communication port (if it is necessary)

3.2.1 Device's installation flow chat illustrated as following



3.2.2 Environment Requirement

Item	Requirement
Machine hall space	When user install machine frame array in one machine hall, the distance between 2 row of machine frames should be 1.2~1.5m and the distance to wall should be no less than 0.8m。
Machine hall floor	Electric Isolation, Dust Free Volume receptivity of ground anti-static material:1×10^{7}~$1\times10^{10\Omega}$,Grounding current limiting resistance: 1MΩ。 Floor bearing should be greater than 450Kg/m^2。
Environment temperature	5~40°C sustainable，0~45°C short time installing air-conditioning is recommended
Relative humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Door & window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Wall	It can be covered with wallpaper, or bright less paint.
Fire protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 100V-240V 50/60Hz 2A Please carefully check before running.

3.2.3 Grounding Requirement

All function modules' good grounding designs are the base of reliability and stability of device. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, system must follow this rule:

1. Coaxial cable's outer conductor and isolation layer should keep sound electric conducting with the metal housing of device.

2. Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.

3. The 2 terminals of grounding wire must make sure for well electric conducting, and process for antirust.

4. It is prohibited that users use other devices as part of grounding wire's electric circuit

3.2.3.1 Frame Grounding

All the machine frames should connect to protective copper strip. The grounding wire should be as short as possible and avoid circling. The section of the conjunction between grounding wire and grounding strip should be equal or greater than 25mm2.

3.2.3.2 Device Grounding

User can connect the device's grounding rod to frame's grounding strip with copper wire.

3.2.4 Wires' Connection

The power supply outlet is located at the right of rear panel, and the power switch is just above it. The protective grounding wire connective screw is located at the down-right side of power supply outlet.

1. Connecting power cord

2. User can insert one end into power supply outlet, while insert the other end to AC power.

3. Connecting grounding wire

4. When the device solely connects to protective ground, it should adopt independent way, say, sharing the same ground with other devices. When the device adopts united way, the grounding resistance should be less than 1Ω

F Caution: Before connecting power cord to 4 in 1 Mux-Scrambling QAM, user should set the power switch to "OFF".

3.2.4.1 Signal Cable Connection

The signal connections include the connection of input signal cable and the connection of output signal cable. The details are as follows:

Tuner Cable Illustration:

- **ASI Cable**

- **IP Input/output Cable Illustration：**

- **RF Output Cable Illustration:**

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Chapter 4 Operation

FUTV4443A 4 in 1 Mux-Scrambling QAM's front panel is user operation interface. Before operating, user can decide whether directly use the default setting or customize the input and output parameters. The detail operations go as follows:

Keyboard Function Description:

MENU: Canceling presently entered value, resuming previous
Setting; Return to previous menu.

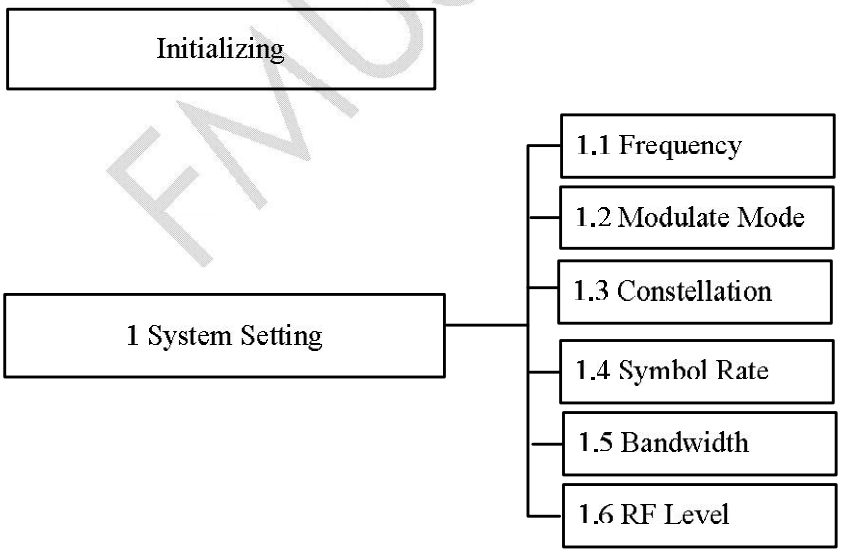
ENTER: Activating the parameters which need modifications, or confirming the change after modification.

LEFT/RIGHT: To choose and set the parameters.

UP/DOWN: Modifying activated parameter or paging up/down when parameter is inactivated.

LOCK: Lock the screen / cancel the lock state. After pressing
"LOCK" key, the system will question the users to save present
Setting or not. If not, the LCD will display the current configuration state.

4.1 LCD Menu Tree



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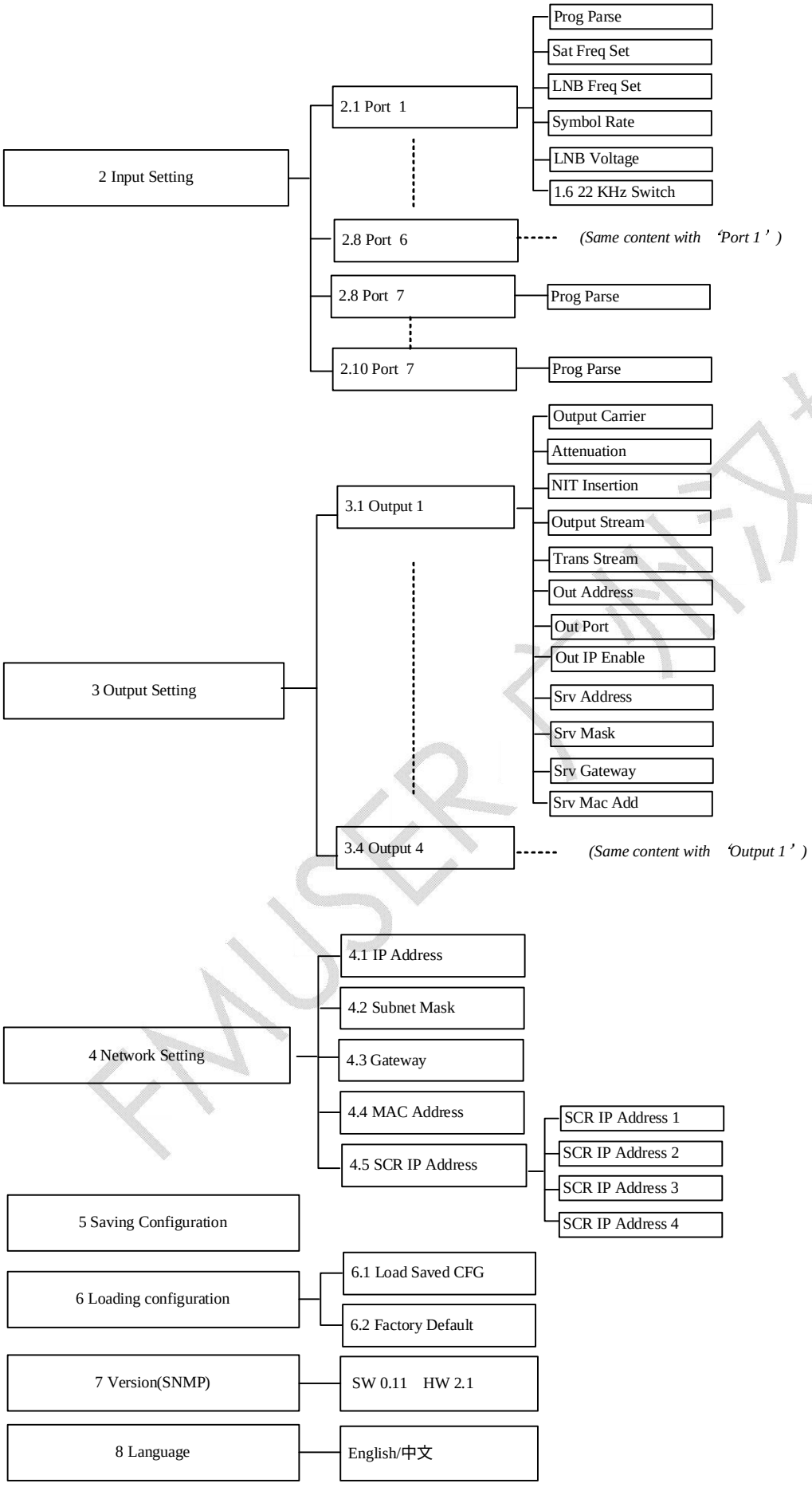
2 Input Setting
2.1 Port 1
Prog Parse
Sat Freq Set
LNB Freq Set
Symbol Rate
LNB Voltage
1.6 22 KHz Switch
2.8 Port 6
(Same content with 'Port 1')
2.8 Port 7
Prog Parse
2.10 Port 7
Prog Parse
3 Output Setting
3.1 Output 1
Output Carrier
Attenuation
NIT Insertion
Output Stream
Trans Stream
Out Address
Out Port
Out IP Enable
Srv Address
Srv Mask
Srv Gateway
Srv Mac Add
3.4 Output 4
(Same content with 'Output 1')
4 Network Setting
4.1 IP Address
4.2 Subnet Mask
4.3 Gateway
4.4 MAC Address
4.5 SCR IP Address
SCR IP Address 1
SCR IP Address 2
SCR IP Address 3
SCR IP Address 4
5 Saving Configuration
6 Loading configuration
6.1 Load Saved CFG
6.2 Factory Default
7 Version(SNMP)
SW 0.11 HW 2.1
8 Language
English/中文

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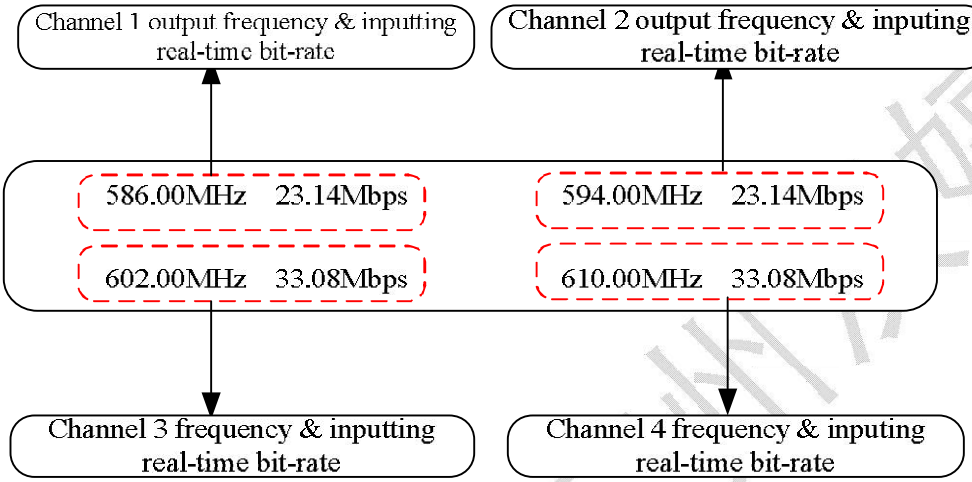
4.2 Main Interface

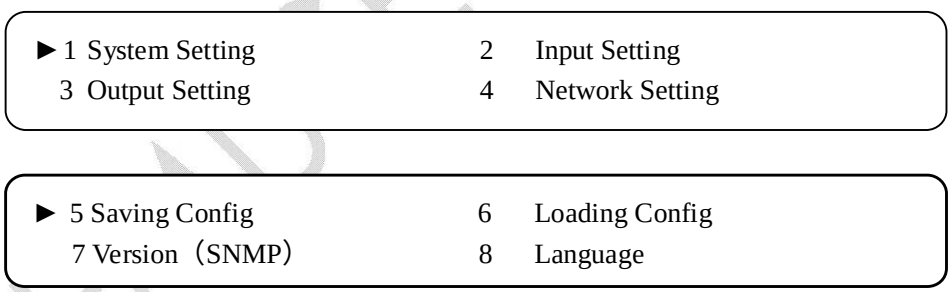
After switching on the Mux-Scrambling QAM, the LCD will display the starting interface as following page:

Data in the first row is the outputting frequency and inputting real-time bit rate of channel 1 and channe2, while data in the second row is of channel 3 and channel 4.


Channel 1 output frequency & inputting real-time bit-rate
Channel 2 output frequency & inputing real-time bit-rate
586.00MHz 23.14Mbps
594.00MHz 23.14Mbps
602.00MHz 33.08Mbps
610.00MHz 33.08Mbps
Channel 3 frequency & inputting real-time bit-rate
Channel 4 frequency & inputing real-time bit-rate

4.2.1 General Setting

By pressing “LOCK” key to enter the main menu, the LCD will display the main menu as the following pages:



By pressing UP/DOWN/LEFT/DOWN key to choose the specified menu item, then pressing ENTER to enter the submenu.

4.2.2 System Setting

User can press ENTER to choose this item, UP/DOWN/LEFT/RIGHT to set the parameters. The system displays following pages:

►1.5 Bandwidth 1.6 RF Level

4.2.2.1 Frequency

The RF output range is from 48MHz~1000MHz.

1.1.1 Frequency 586.00 MHz

4.2.2.2 Modulate Mode

By pressing “1.2 Modulate Mode”, user can choose the standard of QAM modulation as shown below:

1.2. Modulate Standard [J.83A/DVB-C] J.83B J.83C

4.2.2.3 Constellation

By pressing “1.3 Constellation” to enter the QAM modulation mode selection, ENTER to the specified setting. The display shows as below:

1.3 Constellation J.83A (DVB-C) 64QAM

1.3 Constellation J.83A (DVB-C) 64QAM ↕

Three different constellations: J.83A (DVB-C), J.83B, J.83C will show on the LCD window when Constellation been entered.

J.83A (DVB-C) contains 16QAM, 32QAM, 64QAM, 128QAM, and 256QAM;

J.83B contains 64QAM, 256QAM;

J.83C contains 64QAM, 256QAM.

Note: The more advanced QAM constellation mode, the higher transmission efficiency and TS coding rate which the device can transport at the same symbol rate. Accordingly, with the TS coding rate increasing, the signals’ anti-jamming capability will become weaker. What needs to be pointed out is, the effective coding rate this modulator can transport is limitary when the device works as different constellations and symbol rates.

User can refer to the formula as below:

Max_input_bitrate = Symb_rate*qam_bits*188/204

Max input bit rate: the maximum effective inputting coding rate

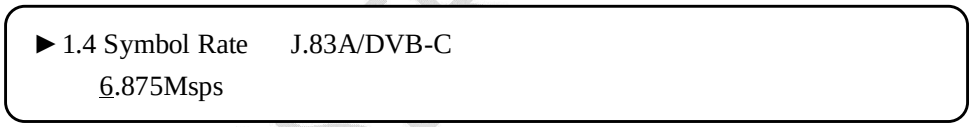
Symb rate: the symbol rate

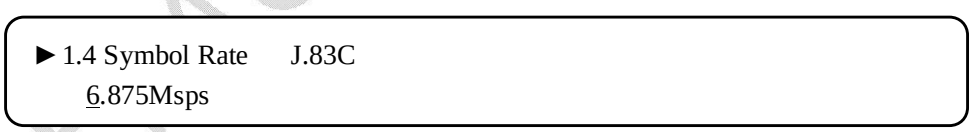
Qam_bits: the QAM bit when device works as current constellation (user can refer to the following table when device works as 6.875Msps symbol rate):

Constellation	qam_bits（bit/symb）	Symb_rate（Msps）	Max_input_bitrate（Mbps）
16	4	6.875	25.343
32	5		31.679
64	6		38.015
128	7		44.350
256	8		50.686

4.2.2.4 Symbol rate

After entering the submenu by pressing ENTER key, user can set the symbol rate by moving the UP/DOWN/LEFT/RIGHT key and then repressing ENTER to confirm.

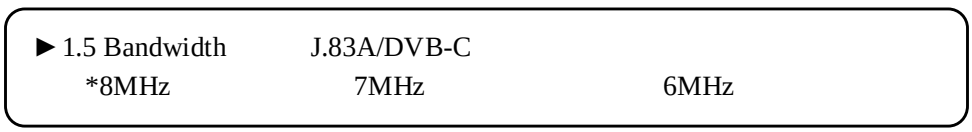




The symbol rate range is 2.5Msps~4.66Msps, 5.0Msps~8.0Msps，1ksps stepping for J.83A/DVB-C and J.83C.

4.3.2.5 Frequency point bandwidth

After entering the submenu by pressing ENTER key, user can set the bandwidth by moving the LEFT/RIGHT key and then repressing ENTER to confirm.



J.83A (DVB-C) contains 8MHz, 7MHz, 6MHz;

J.83B contains 6MHz;

J.83C contains 6MHz;

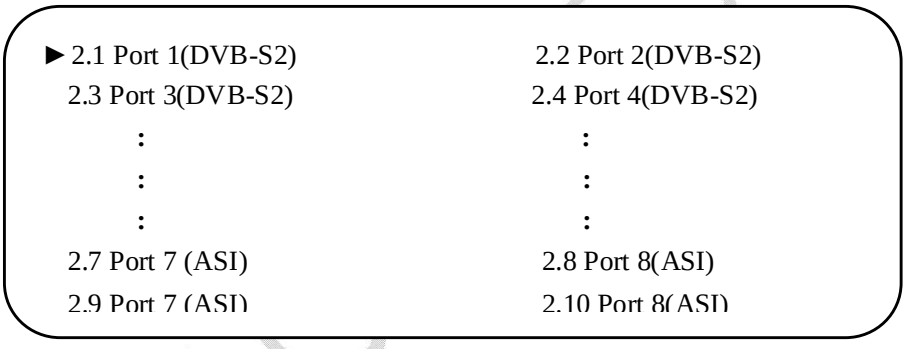
4.3.2.6 RF Level Setting

After entering the submenu by pressing ENTER key, user can set the RF Level by moving the UP/DOWN/LEFT/RIGHT key and then repressing ENTER to confirm.

The total RF range is from 6 to -25db in 0.5db step.

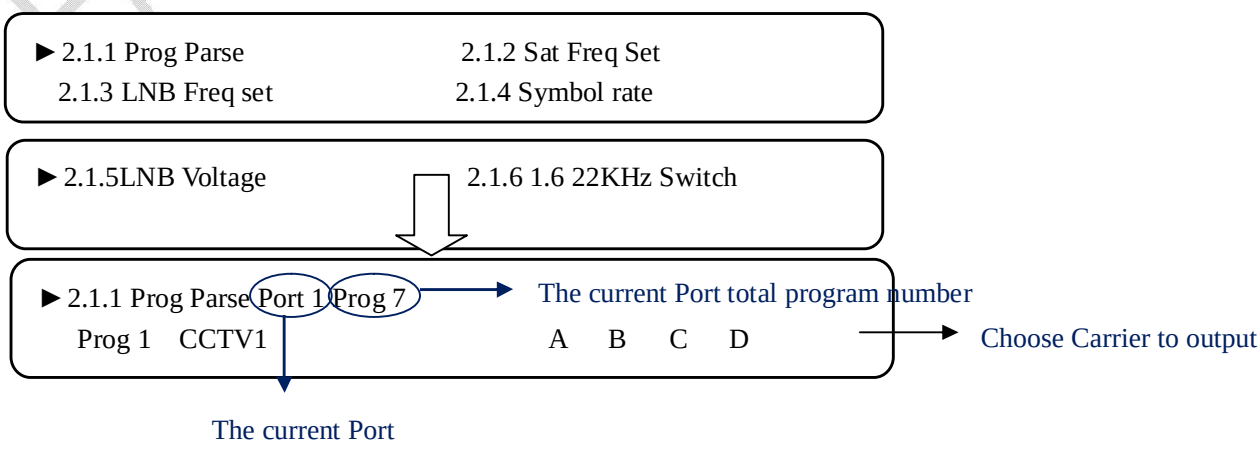
4.2.3 Input Setting

User can select “Input setting” in the main interface and then press ENETR to view the inputting ports. The display show as below:



The setting principle is the same for 2.1 to 2.6 turner input port. Hereby we just take Port 1 as an example to illustrate.

User can choose Port 1 in the submenu by pressing ENTER, and the display shows as below:


► 2.1.1 Prog Parse
2.1.2 Sat Freq Set
2.1.3 LNB Freq set
2.1.4 Symbol rate
► 2.1.5LNB Voltage
2.1.6 1.6 22KHz Switch
► 2.1.1 Prog Parse Port 1 Prog 7
The current Port total program number
Prog 1 CCTV1
A B C D
Choose Carrier to output
The current Port

NOTE:

1) When user enters this submenu, user can choose the output program(s) by moving the UP/DOWN key.

2) Then pressing ENTER to choose the output Carrier(s). Moving the UP/DOWN key to turn up the mark "※", which means to output the program from current Carrier.

2.1.2 Sat Freq Set
3840 MHz

2.1.3 Symbol Rate
27.500MHz

2.1.4 LNB Voltage
*V (13V) H(18V) OFF(OV)

2.1.6 22 KHz Switch
*OFF ON

2.7 to 2.10 are for ASI input port. The Program Parse setting principle is the same as tuner input..

►2.7.1 Prog Parse

4.2.4 Output Setting

User can select "Output setting" in the main interface and then press ENETR to set the outputting parameters. The display show as below:

►3.1 Output 1 3.2 Output 2
3.3 Output 3 3.4 Output 4

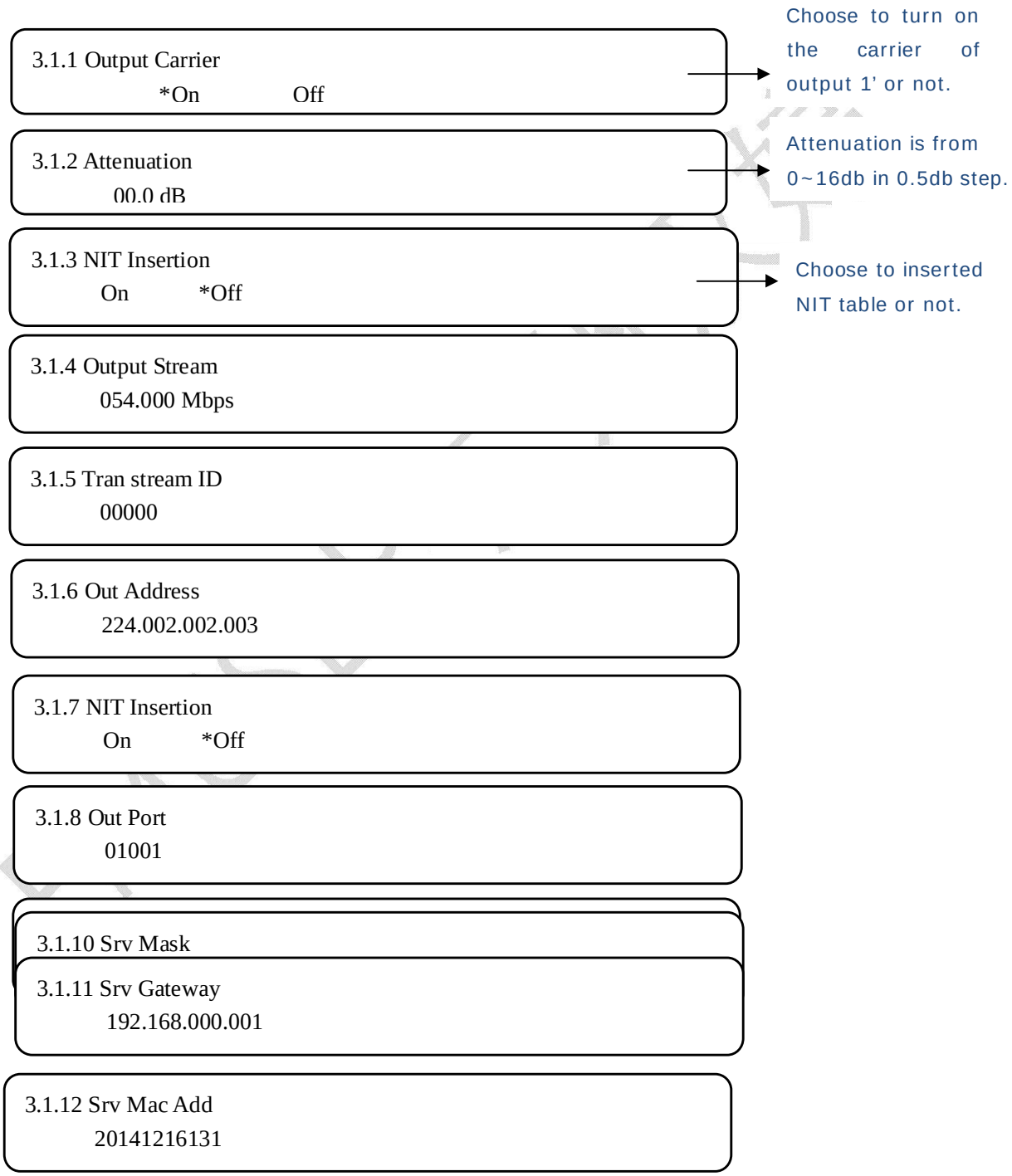
Hereby we just take Output 1 as an example to illustrate.

User can choose output 1 in the submenu by pressing ENTER, and the display shows as below:

►3.1.1 Output Carrier 3.1.2 Attenuation
3.1.3 NIT Insertion 3.1.4 Output Stream

►3.1.5 Trans Stream 3.1.6 Out Address
3.1.7 Out Port 3.1.8 Out IP Enable

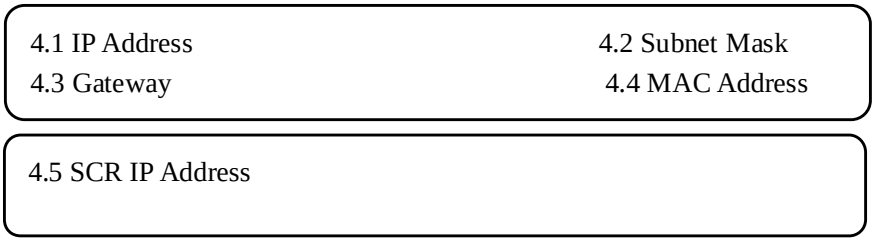
Under the following submenus, there are parameters which can be set manually; user can press "Up/Down" to choose this item. "Enter" and "Left/Right" to set the parameters. The system displays following pages.



The operation of output 2, output 3 and output 4 is the same as output 1.

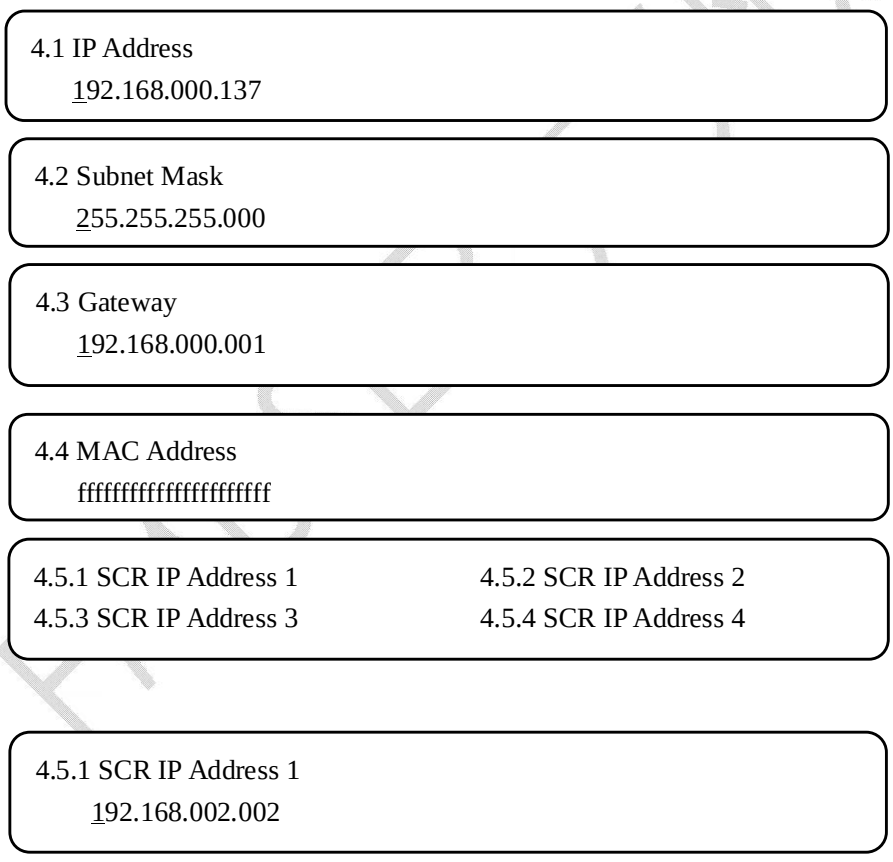
4.2.4 Network Setting

By pressing MENU button on the front panel, user can return to the main interface and then select item Network Setting by pressing ENTER to set the parameters. The system displays following pages.



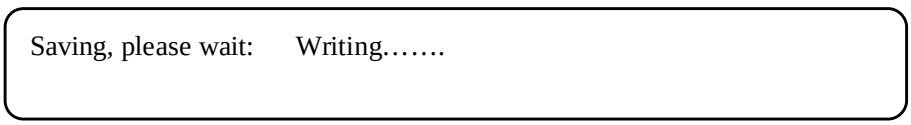
Note: The MAC address is according to the factory setting, and it's unique.

Under the following submenus, there are parameters which can be set manually; user can press "Up/Down" to choose this item. "Enter" and "Left/Right" to set the parameters. The system displays following pages.



4.2.5 Saving configuration

User can choose to save the current configured parameters by pressing ENTER key. The system displays following page:

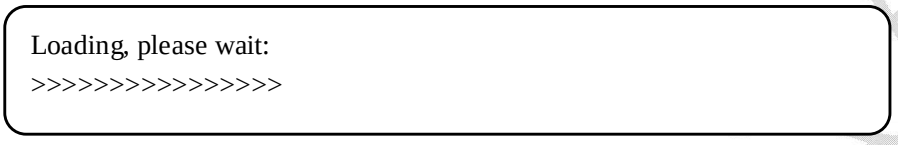


4.2.6 Loading configuration

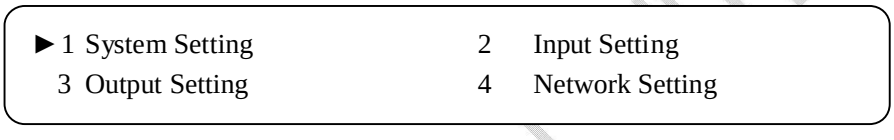
At this menu, press LEFT/RIGHT key and ENTER to confirm.

User can restore the device into the last saved configuration by choosing “6.1” and restore the device into factory configuration by choosing “6.2”.

When user chooses “6.1” to load saved configuration, the display shows as below:



When user chooses “6.2” to restore the device into factory configuration, the display will automatically return to the main menu as below:



4.2.7 Version (SNMP)

User can check the hardware version and software version of the equipment.

4.2.8 Language

User can select the needed language at this submenu:

Chapter 5 SNMS Setting

Network Management System Profile

Network management system is applied to digital TV equipment operation, control, management and parameters setting, etc. It centralizes digital TV equipment through network.

5.1 Installation

The software doesn't need special installation. User can just copy "Network Management Software X.XXY.exe" to the specified directory (X.XX is version number, Y represents language. For example: the version number of network management software 4.01E.exe is 4.01 English version) or place different versions of network management software to the same directory. When the network management software is running, it will generate two documents as follows:

Network management software X.XXY.log (It preserves the log file.)

Info. Bin (It's the user configuration data.)

5.2 Software Operation

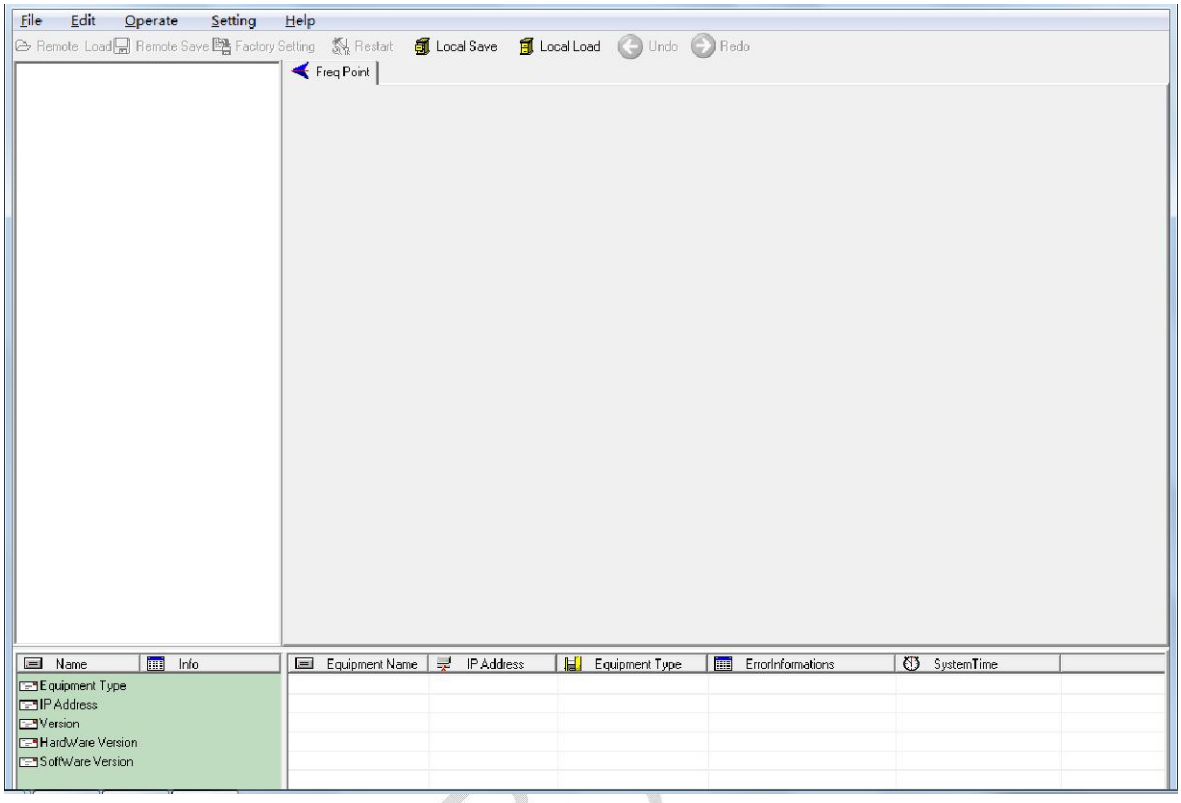
5.2.1 Login Interface

A login interface will pop up firstly when the software is running and give user prompts to input user name and password, the menu shows as follows:

User can login the NMS by pressing **Confirm** key after inputting user name and password. Upon the inputs, the software will verify them with database record automatically. If both of them are correct,

the main interface will appear. Both of the default user name and password are **admin**.

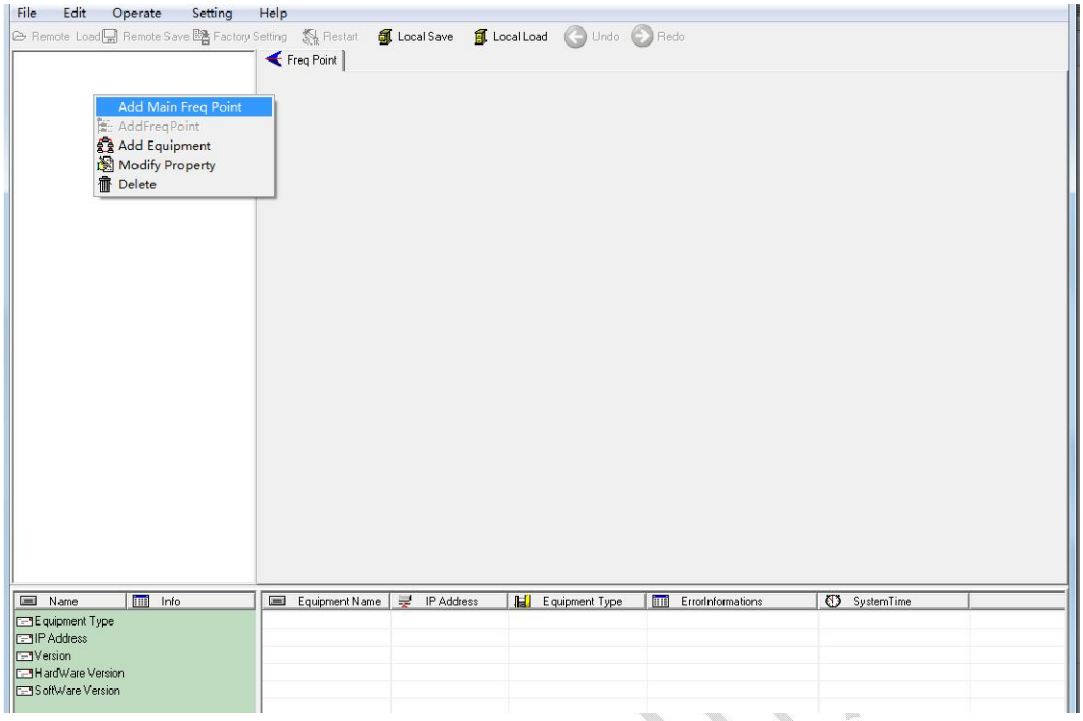
5.2.2 Main Interface

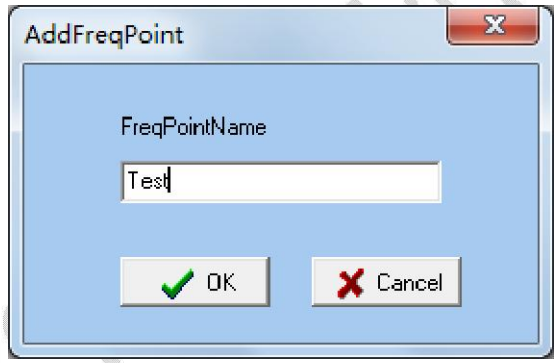


User can create a device node tree in the left column by adding, modifying and deleting the device node. This software provides a powerful node operation function, and the user can edit various parameters in the device tree for management and classification.

5.2.3 Adding Frequency Point

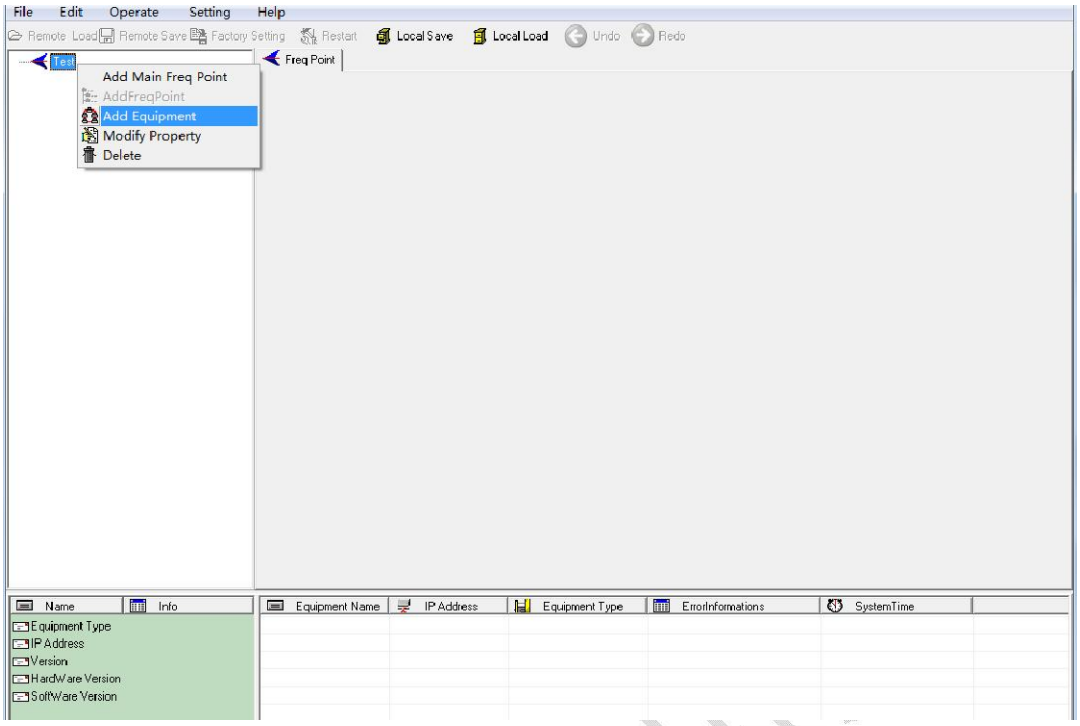
The Add Freq Point dialog box popes up when the user clicks the **Add Freq Point** item in the Edit pull down menu on the menu row. User can also click right mouse key to pop up the short-cut menu in device tree or in the left blank column, then the Add Freq Point dialog box popes up by choosing **Add Main Freq Point**. The device will confirm the given frequency while user clicks **OK**.





5.2.4 Adding Equipment under Given Frequency Point

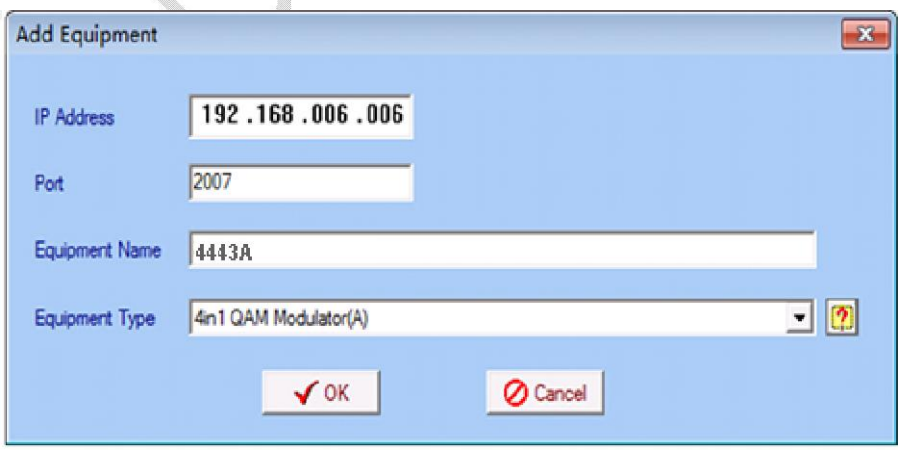
User should choose the frequency point in advance, and then the dialog box of Add Equipment will pop up when user clicks **Add Equipment** item in the Edit pull-down menu on the menu row or clicks right mouse key to pop up the short-cut menu in device tree or in the left blank column, then the Add Equipment dialog box popes up by user's choosing **Add Equipment**



5.2.5 Edit Equipment Interface

User should follow the steps as below:

- Inputting the device IP Address
- Inputting the device Port Number
- Inputting the Equipment Name
- Choosing the connected equipment type in drop down list of “Equipment Type” by clicking the “▼” Or Click “?” to auto fine the type of device.



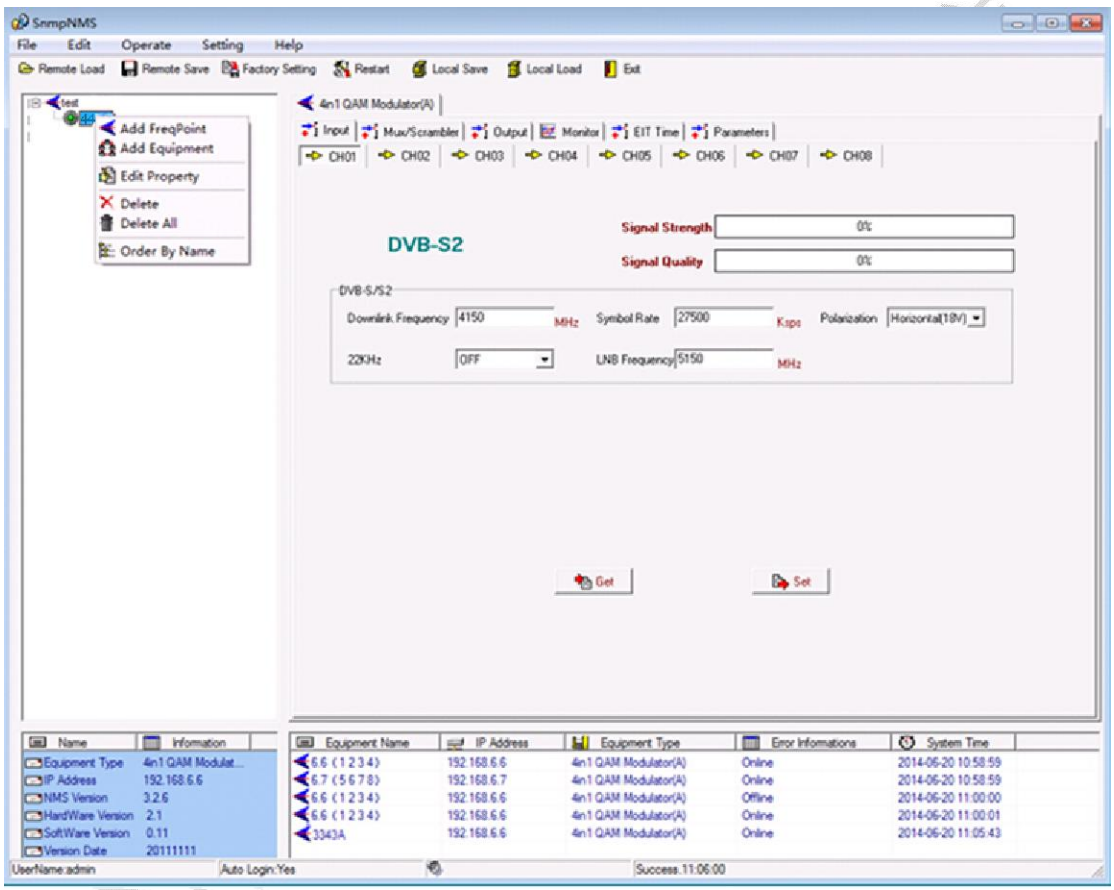
NOTE:

1. The default IP of FUTV4443A is 192.168.2.1, also you can check its IP address in the front panel of device in case the IP changed unexpected.

2. The NMS PC IP address and device IP address should be in the same network. For example the Device IP is 192.168.2.1. Submask is 255.255.255.0. So the NMS PC IP address should be 192.168.2.X (1<X<255), submask is 255.255.255.0.

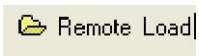
5.2.6 Delete Equipment

User can choose the equipment to be deleted in the left column, and then click the “delete” item in the pull down menu which appears by clicking the right mouse key.



5.2.7 Save Configuration

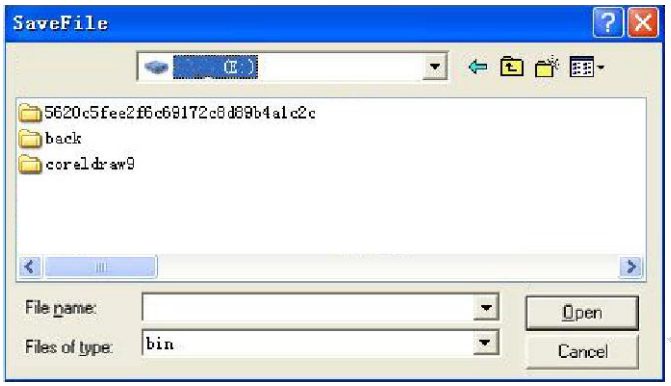
After finishing all the parameters setting, user can click

button on the toolbar to save the modifications to the device’s flash, while user can also reload the saved parameters from device’s flash and refresh the device’s parameters setting according to the loaded values by clicking 

Alternatively, user can also click the

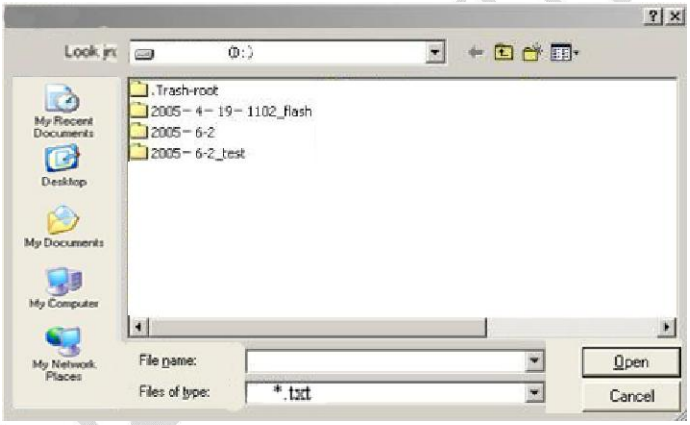
button on the toolbar to popup the “save file”

dialog box, which gives prompts to save all the device's parameters as binary files in the computer's hard disk.



Similarly, user can choose to click the

button on the toolbar to popup the read file dialog box, to read the stored binary file and set the device's parameters according to the loaded binary files.



5.3 4443A 4 in 1 Mux-Scrambling QAM Operation

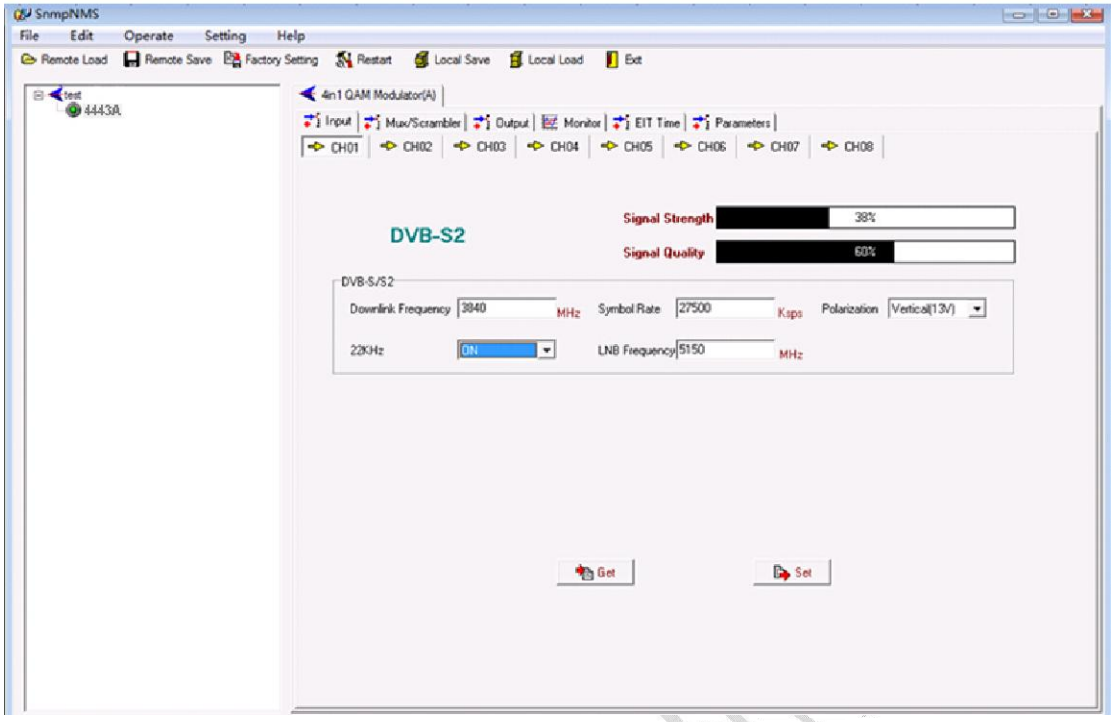
User can choose the "4443A" in the device tree.

Set: making the current parameters, which show in the NMS software, activate.

Get: reading the current device's activating parameters and show them on NMS software.

Input setting

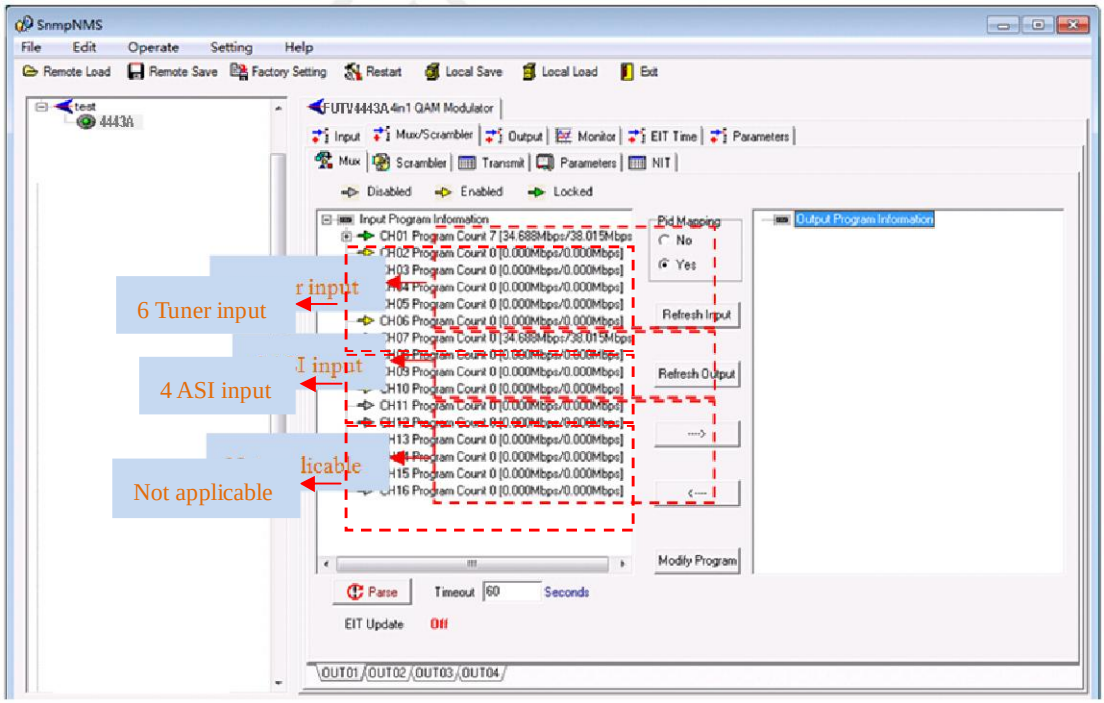
User can select "Input setting" in the main interface.



5.3.1 Mux/Scrambler Setting

In this field, users can set and get the device inputting parameters

5.3.1.1 Mux

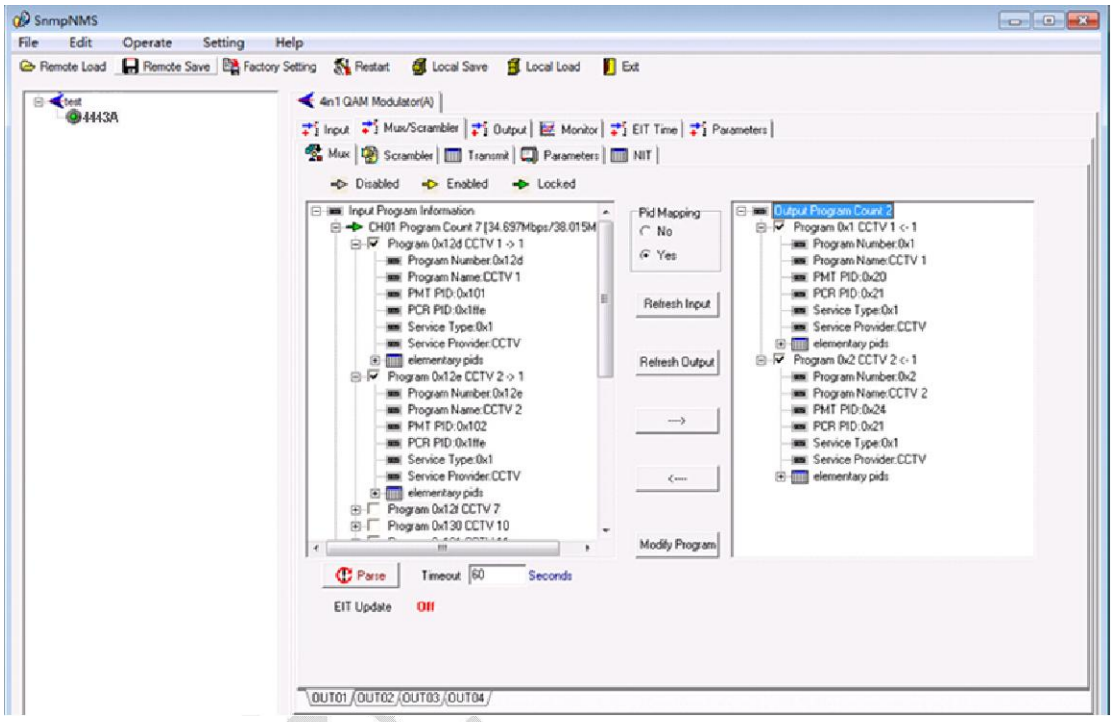


In this box, all 10 inputting ports(6 tuner input and 4 ASI input port) are displayed in the left box. User can select any port and scan all the programs contained in each port by clicking PARSE button

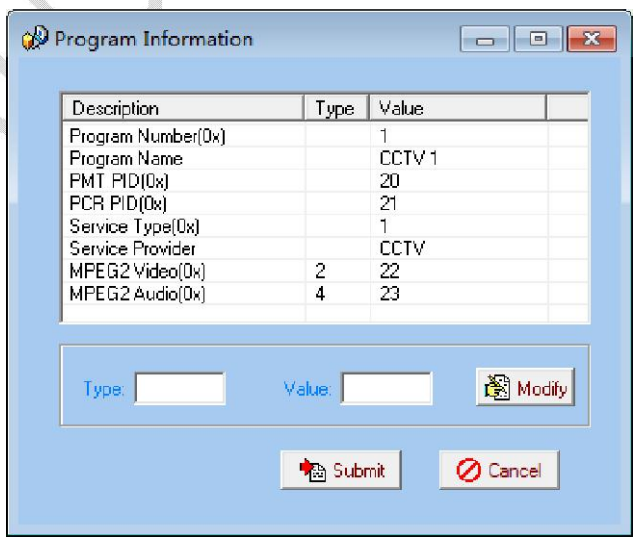
at the bottom left corner.

Programs refresh input/out

User can select the program to be multiplexd and click the arrow to add it to the right box, or user can delete the programs which have been multiplexed from the right box by clicking the arrow



5.3.1.1.3 Program Modification

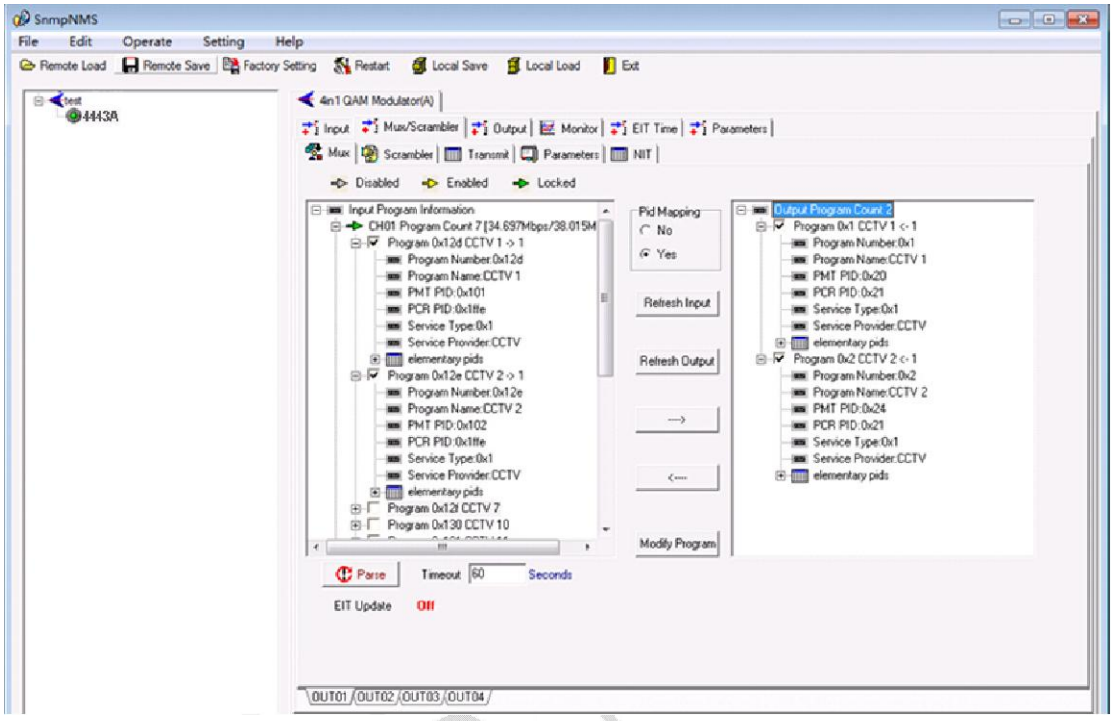


In case the user intend to customize the details of the programs, user can select the target program and click Modify Prg button between the 2 boxes, then the modify interface pops out as

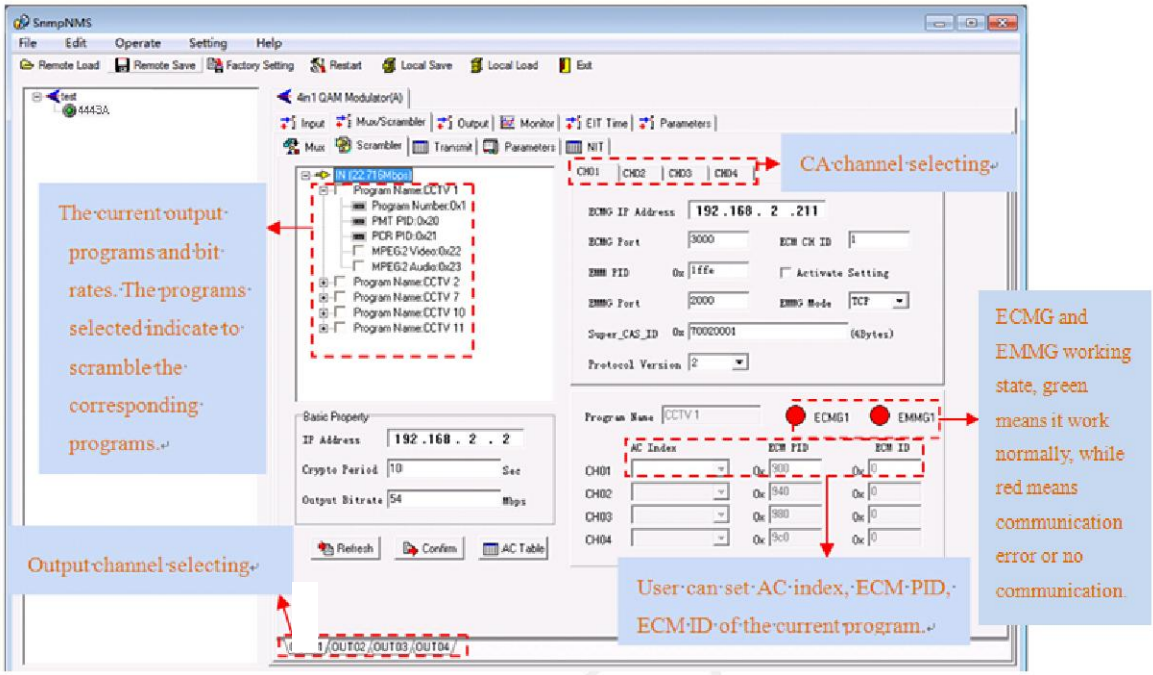
shown above. User can select the item to be modified and input new information in the corresponding box below. To prosper the modification, pls do click the Modify botton

at right and Confirm botton

at left corner. The modified programs are displayed in the right box and an illustration for reference is as follows:



5.3.1.2 Scrambler Setting


The current output programs and bit rates. The programs selected indicate to scramble the corresponding programs.
CA channel selecting
ECMG and EMMG working state, green means it work normally, while red means communication error or no communication.
Output channel selecting
User can set AC index, ECM PID, ECM ID of the current program.

IP Address

This field means the scrambling IP address of the current outputting channels. The scrambling IP addresses of all modules in the network must be different, and the NMS IP addresses of all modules must be different. Otherwise, it will cause IP conflict, and the device will not work normally.

Crypto Period

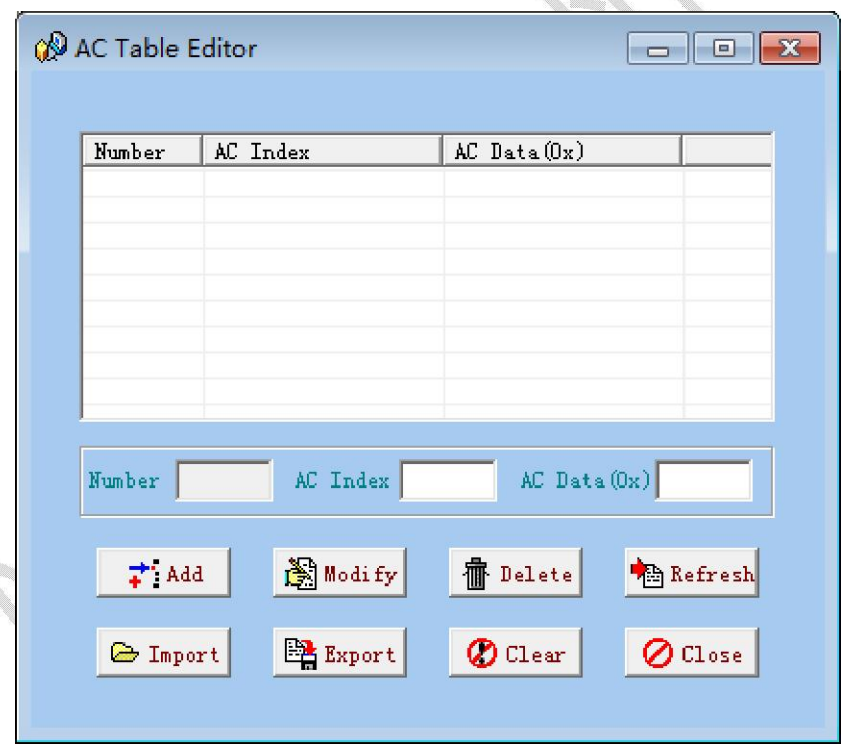
This field means the scrambling crypto period of the current outputting channels. After the specified crypto period, the CW will be changed to a new one.

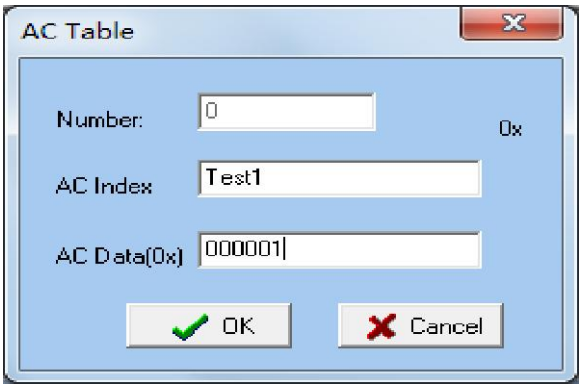
Output Bit-rate

This filed means the TOTAL bit-rate of the current output.

AC Table

Editing the AC list and then users can add, modify, open and save the AC data. When clicking it, it will pop up the following interface:

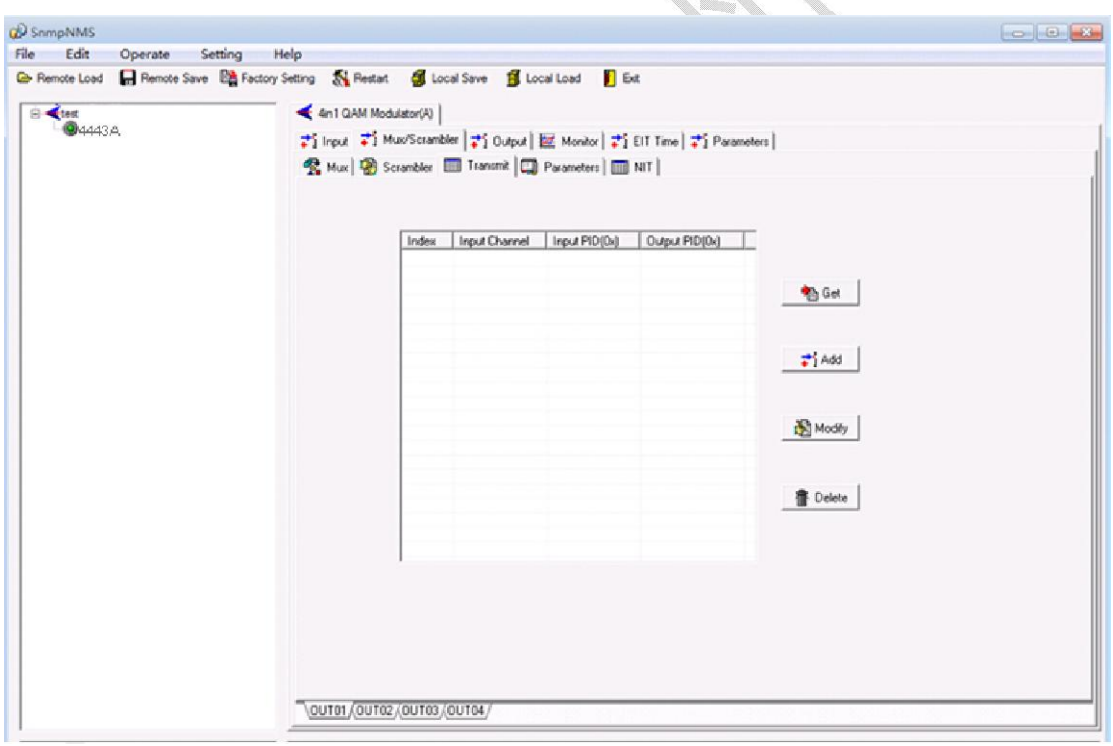




After the modification, users can click the Confirm button to submit the current configuration, and click the Cancel to quit the current operation.

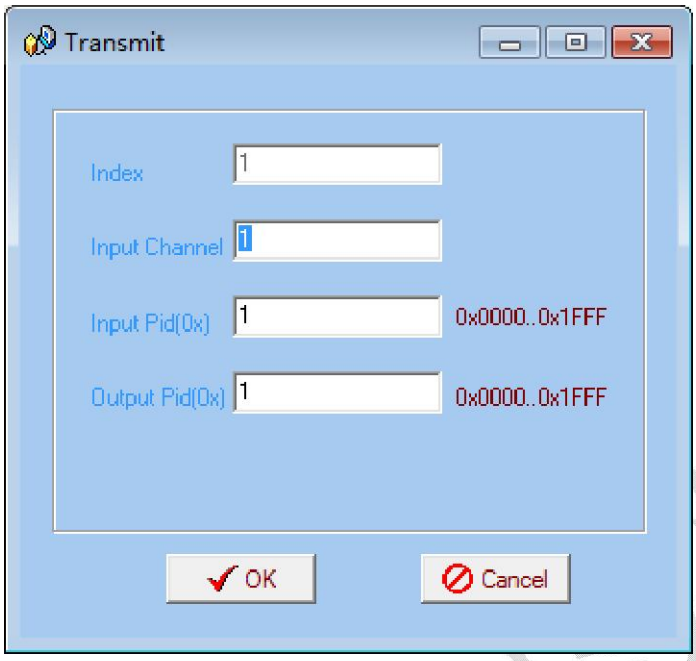
5.3.1.3 Transparent Transport Pass

User can decide to bypass the inputting PID as needed in this interface. This interface can be used pass through the EPG table, STB update data, etc.



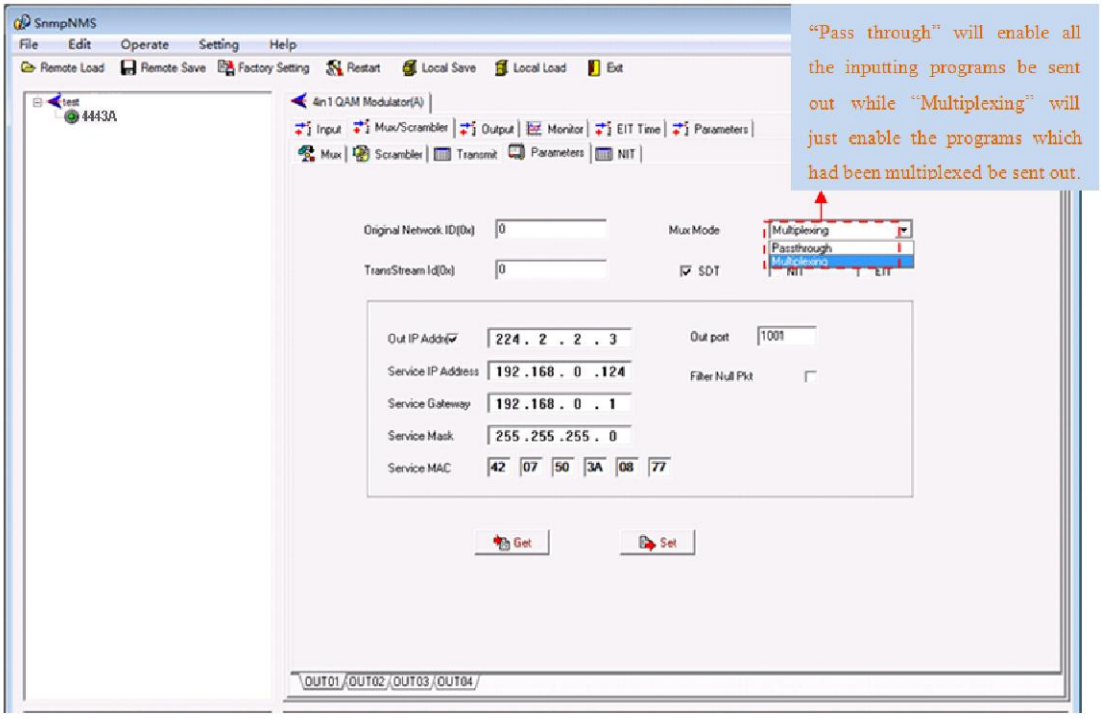
By clicking Add button

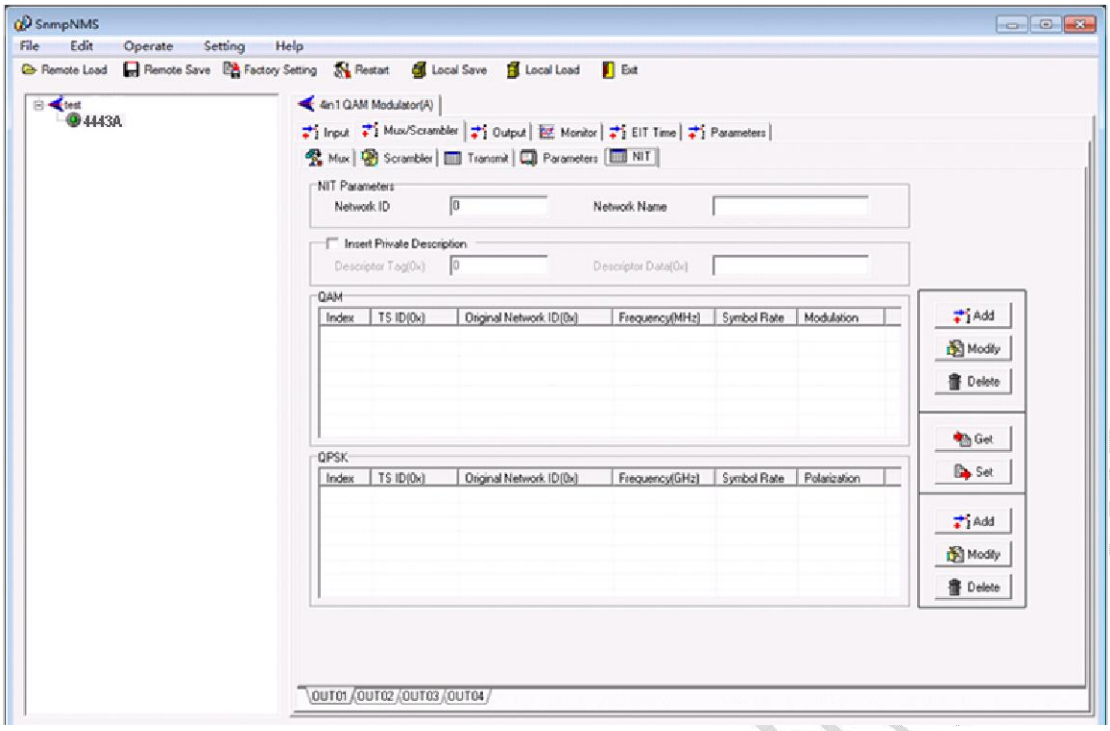
, the below interface will pop out:



5.3.1.4 Parameters

User can set the output parameters in this interface, the display shows as below.

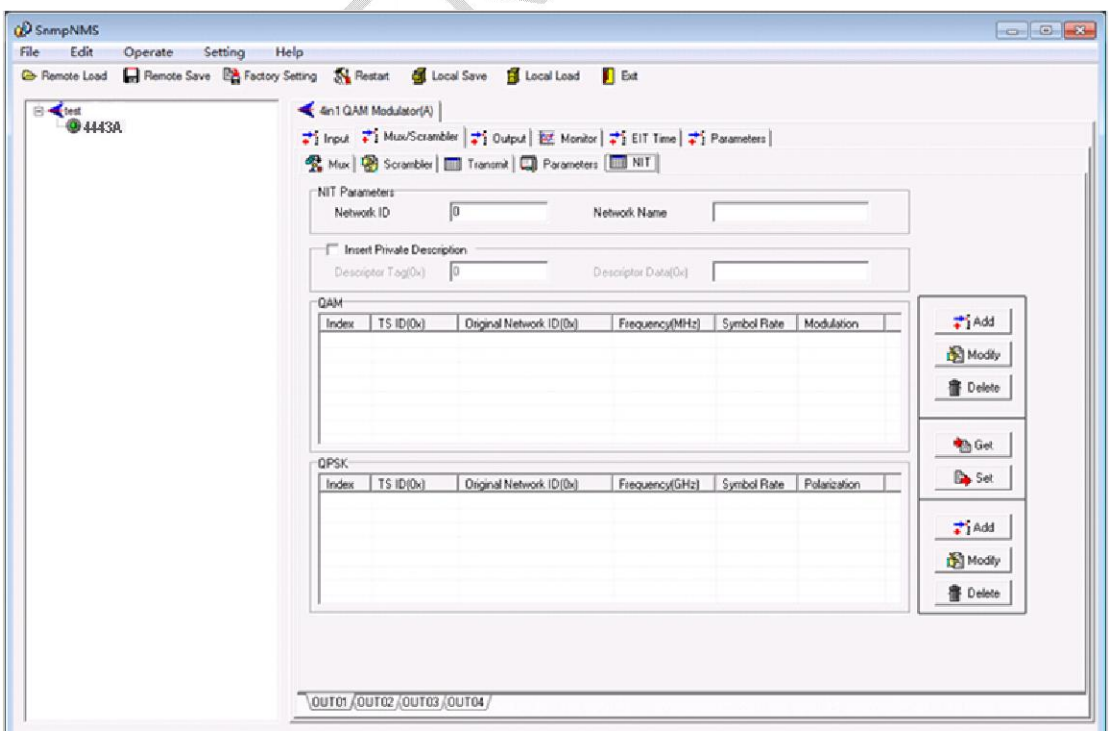




5.3.1.5 NIT

NIT: Network Information Table.

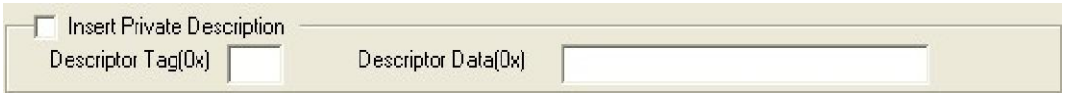
NIT table is a very important table for describing the network and TS. Users can set the parameters of the output NIT table as below.



Network ID：The parameter describes the output TS's network ID

Network Name：The parameter describes the output TS's network name

Insertion private description

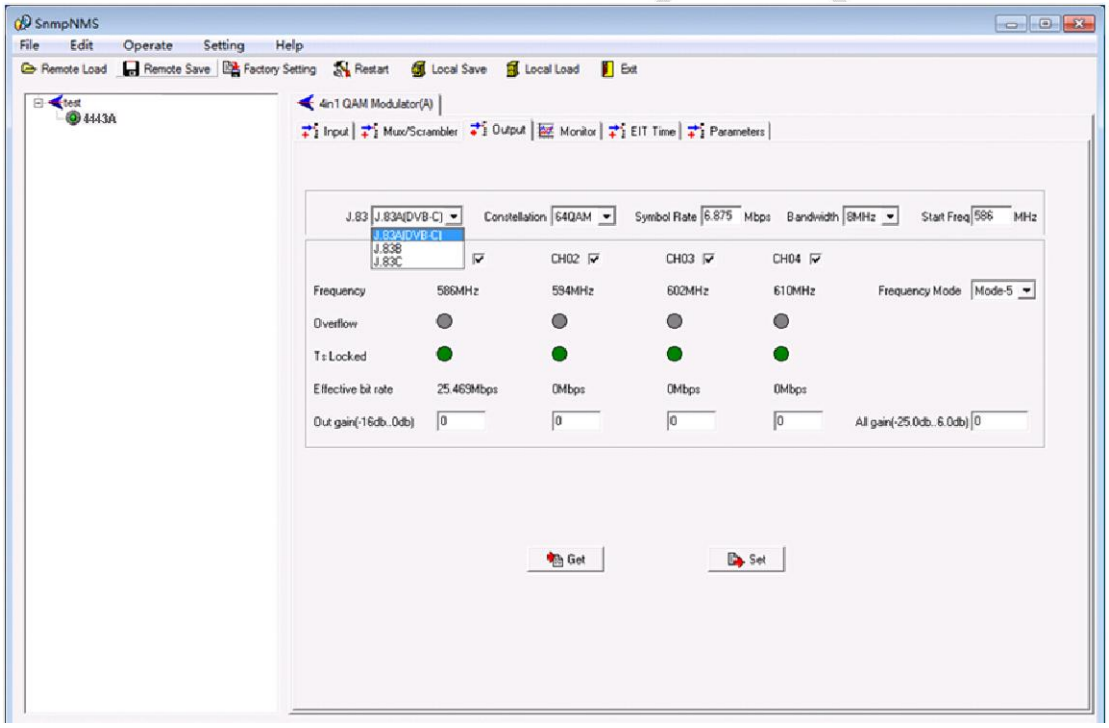


Insert Private Description：This checkbox will allow user to insert the private descriptor into the output TS. The private descriptor includes two parts. One is descriptor tag, and the other is descriptor information.

Descriptor Tag(0x)：The descriptor tag is an 8-bit field which identifies each descriptor.

5.4 Out Setting

User can set the parameters of the 4 output QAM carriers (adjacent channels).



Modulation standard: J.83A (DVB-C)

Constellation: 16QAM/32QAM/64QAM/128QAM/256QAM optional

Symbol Rate range: 2.5Msps~4.66Msps, 5.0Msps~8.0Msps，1ksps stepping

Bandwidth：6M/7M/8M optional

Modulation standard: J.83B

Constellation: 64QAM/256QAM optional

Symbol Rate range: 5.057 Msps

Bandwidth：6M optional

Modulation standard: J.83C

Constellation: 64QAM/256QAM optional

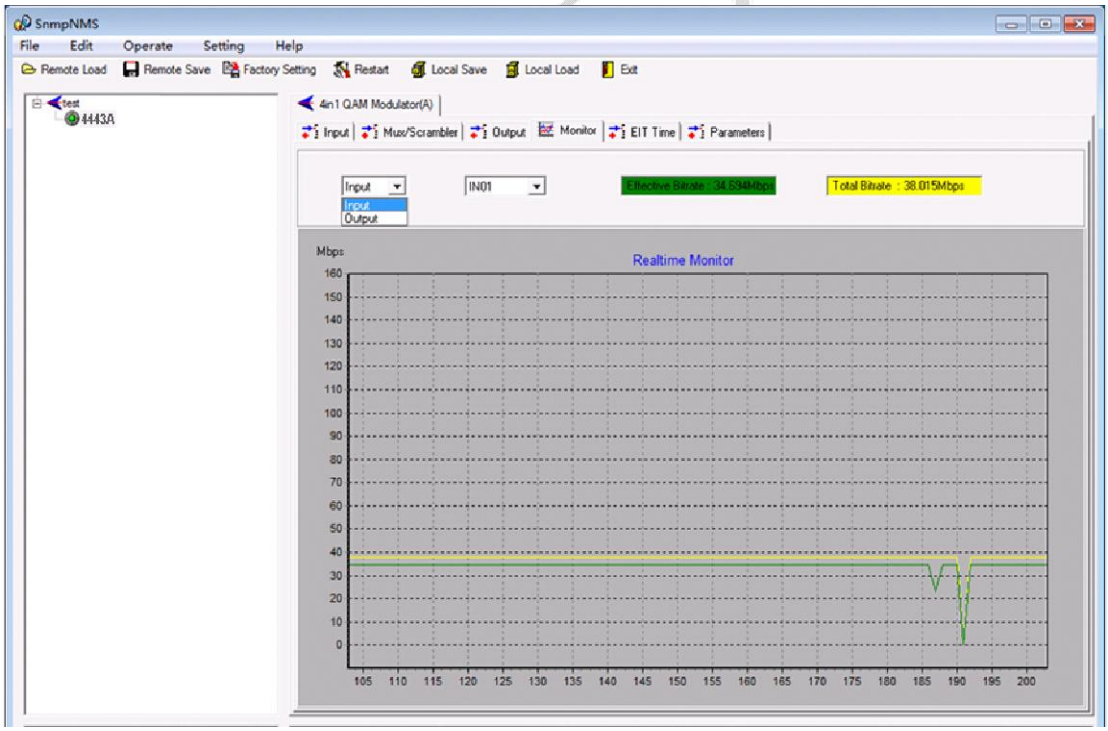
Symbol Rate range: 2.5Msps~4.66Msps, 5.0Msps~8.0Msps，1ksps stepping

Bandwidth：6M optional

Out gain: attenuation ranges -25dBm~6dBm，0.5dB stepping

5.5 Real-time Monitor

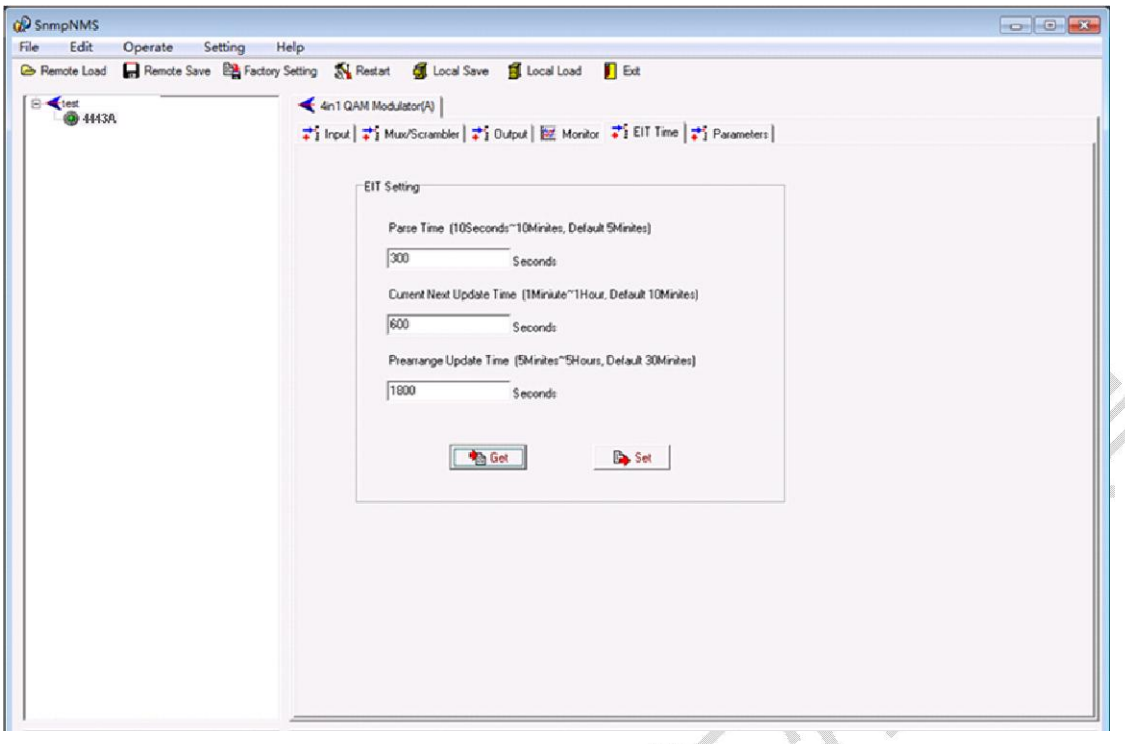
In this interface, users can monitor the code rate of inputting (256 IP optional) and outputting (1-8 optional) clearly.



5.6 EIT Time

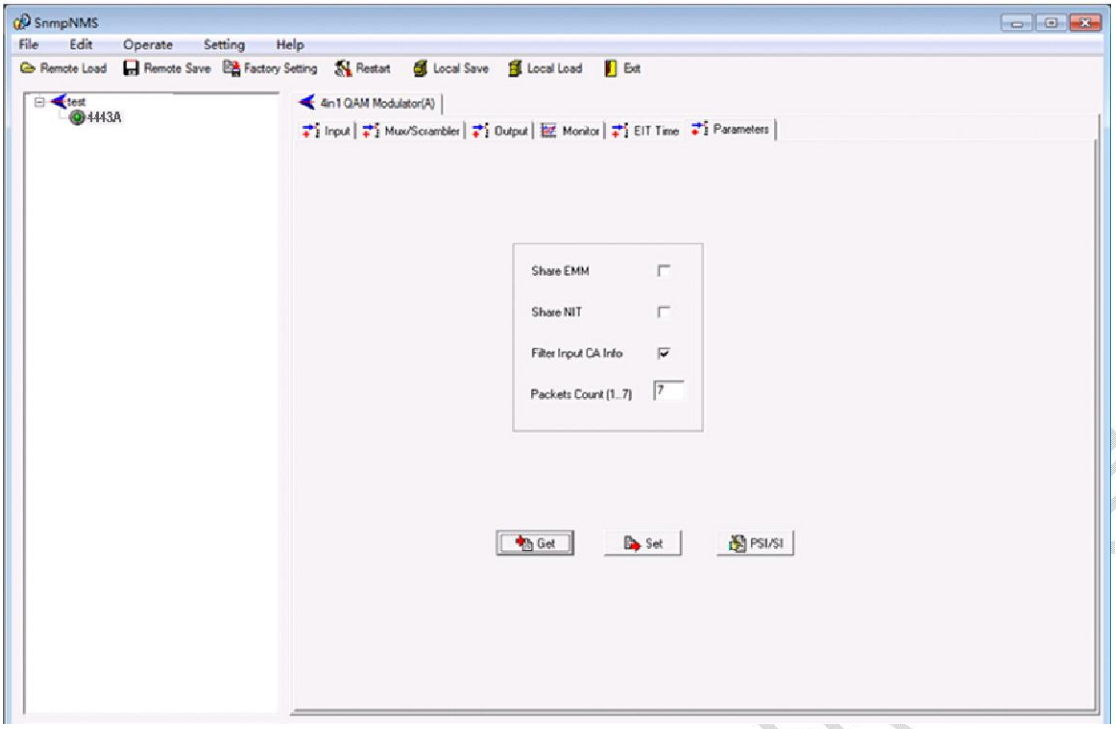
In this interface, users can set the Parse Time, Current Next Update Time and Prearrange Update

time.



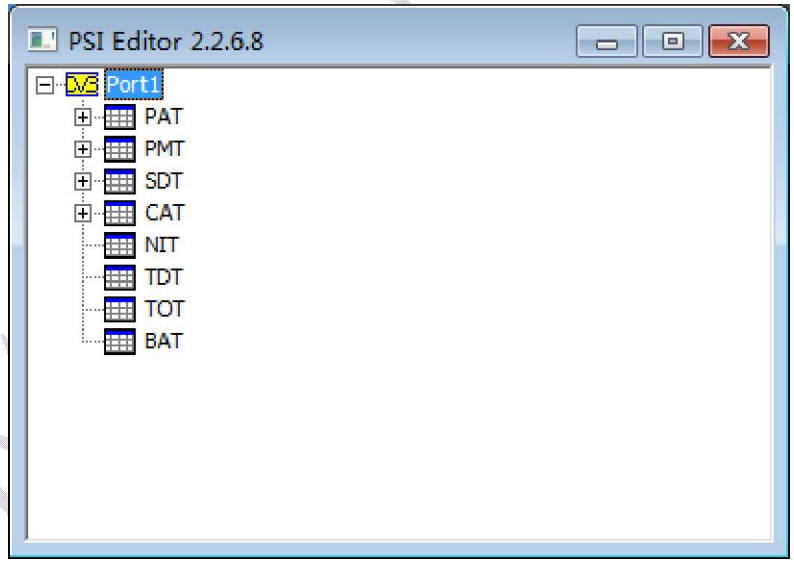
5.7 Parameters

User can set the parameters in this interface, the display shows as below.



User can edit and insert PSI/SI by clicking

. It will pop up the following interface:



Chapter 6 Troubleshooting

This ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All our products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by our company. To prevent potential hazard, please strictly follow the operation conditions.

Prevention Measure

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC voltage within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.

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Chapter 7 Packing List

- FUTV4443A 4 IN 1 Mux-Scrambling QAM 1pc
- User's Manual 1pc
- Tuner wire 5pcs
- ASI wire 4pcs
- Grounding wire 1pc

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